

# FineTek PT-53 SERIES TEMPERATURE CONTROLLER



PT-5320 (48\*48) PT-5330 (96\*48) PT-5331 (48\*96)



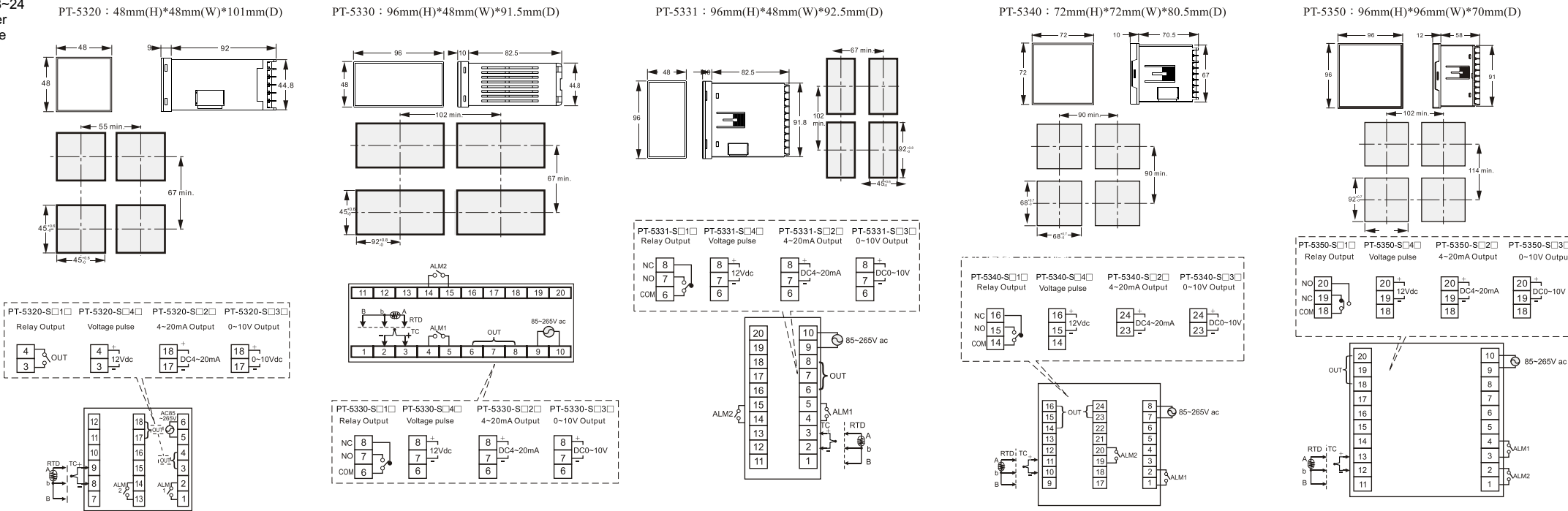
PT-5340 (72\*72) PT-5350 (96\*96)

### Content of the packaging

- Noumenon
  - Washer
  - Back cover
  - User's manual
  - Bracket (2pcs)
- Thank you for please read the User's manual first before buying Fine-Tek products and using And is familiar with product performance and every function, please keep the user's manual so that consult in future

### TERMINAL ARRANGEMENT

Please inspect the specification of the power. Don't connect the end Terminals not used. Propose that the signal line uses AWG 18~24 to enclose the isolate wire, the main power cable and relay export the contact and use AWG 25~30.



### Warning!

1. Really lock the end Terminals screw, if the screw has not been locked but lost by causing the fire or mechanical breakdown.
2. Please don't be using this product and having places where we can fire gas, cause the risk of exploding by the fact that it may.
3. The life-span of the relay must depend on the user's usage, the use of the relay must be in specified load and life-span of electric apparatus that it labels, if the use of the relay exceeds its life-span, the danger that may melt or cause the fire in the contact of

### Caution!

- Please strictly observe the following instructions, it can
- Use the product within the ratings specified for submerging in water and exposure to oil.
  - Do not use the product in locations subject to vibrations or shocks. Using the product in such locations over a long period may result in damage due to stress.
  - Do not use the product in locations subject to dust, corrosive gases, or direct sunlight.
  - Separate the input signal devices, input signal cables, and the product from the source of noise or high-tension cables producing noise.
  - Separate the product from the source of static electricity when using the product in an environment where a large amount of static electricity is produced (e.g., Foming compounds, powders, of fluid materials)

### Specification

Power supply	85~265Vac 50/60Hz	
Display(PT-5320)	Upper: 0.36" red Lower: 0.28" green	
Display(PT-5330)	Upper: 0.39" red Lower: 0.28" green	
Display(PT-5331)	Upper: 0.41" red Lower: 0.36" green	
Display(PT-5340)	Upper: 0.56" red Lower: 0.36" green	
Display(PT-5341)	Upper: 0.56" red Lower: 0.36" green	
Input	Termocouple:J,K RTD:PT100	
Relay (Resistance load)	SPST-ON 3A/250VA(PT-5320) SPDT 5A/250VA(PT-5330) SPDT 5A/250VA(PT-5331) SPDT 5A/250VA(PT-5340) SPDT 5A/250VA(PT-5350)	
	Voltage Pulse (forSSR drive) 0/12Vdc,Max 20mA	
Linear voltage	0~10Vdc,Max600Ω	
Linear current	4~20mA,Max600Ω	
Control direction	Heating or Cooling	
Control Method	ON/OFForPID	
Set Value	-99~999 °C/°F	
Hysteresis	0~999 °C/°F	
Relay	SPST 3A/250Vac (Resistance load)	
Alarm direction	Over/Under	
Set Value	-99~999 °C/°F	
Time delay	0~99 Sec	
Hysteresis	0~999 °C/°F	
Operation	0~50°C (20~85% RH)	
Accuracy	± 0.5% ± 1 digit	
Sampling Interval	200 ms	
Memory	EEPROM	
Temperature range		
INPUT TYPE	RANGE	ACCURACY
K TYPE	-99 ~ 999°C	± 0.5% ± 1 digit
J TYPE	-99 ~ 999°C	± 0.5% ± 1 digit
PT100	-99 ~ 850°C	± 0.5% ± 1 digit

### ORDER INFORMATION

Dimension	20---48*48 40---72*72 30---96*48 50---96*96 31---48*96
Input	0---J Type 1---K Type 2---PT100
Control output	0---None 1---Relay output 4---NPN, 20mA at 12VDC
Alarm	0---None 1---One 2---Two

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Made in Taiwan

### FUNCTION LIST & INPUT BUTTONS EXPLANATION

Hot keys the following menu items (hold on hot keys about 2 secs)

Hot key	Setting range	Default Value	Description
[S] [U]	-99 ~ 999°C	30°C	Set Value
[S] [A]	-99 ~ 999°C	80°C	Alarm1 Value
[R] [L]	-99 ~ 999°C	0°C	Alarm2 Value
[R] [L] [A]	High / Low	High(heat)	Control Direction
[R] [L] [A]	High / Low	High	Alarm1Direction
[R] [L] [A]	High / Low	Low	Alarm2 Direction

### The explanations of input buttons

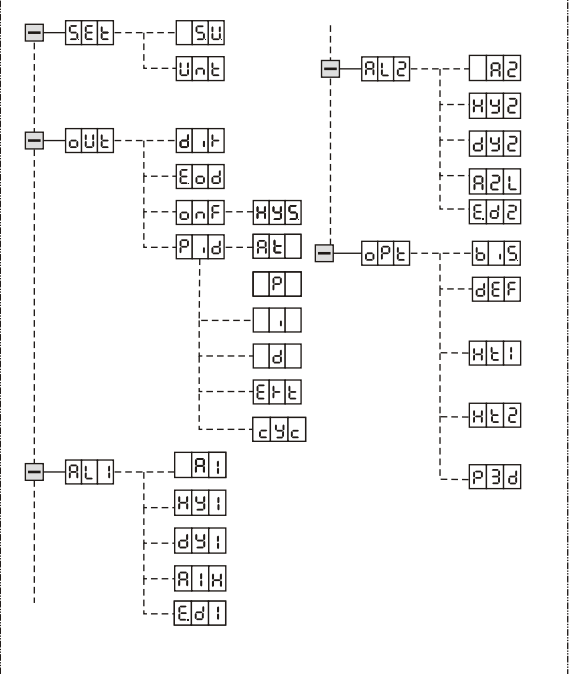
Menu	Enter	Back off	Select
Setting (Flash)	Numerical State	Confirmation Confirmation	Hundred Ten One

Error Message	Explanation
UUU	Over scale
nnn	Under scale
---	Sensor break

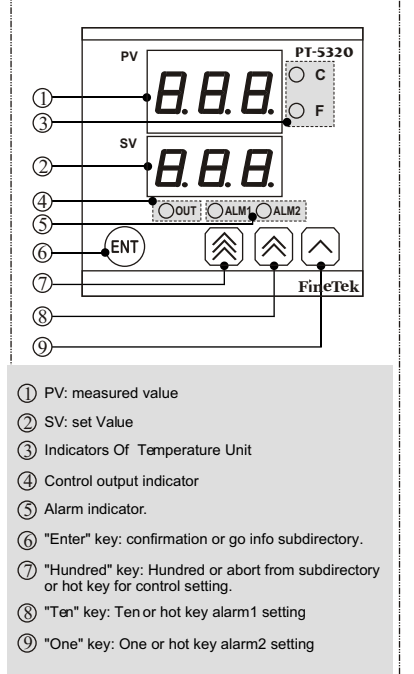
MAIN MENU	SUB MENU 1	SUB MENU 2	DATA RANGE	DEFAULT VALUE	DESCRIPTION	
Set	SU Set value		-99 ~ 999°C	30°C	SV: For setting the desired temperature.	
	Unit unit		°C / °F	°C	The conversion of temperature unit	
	d h direction		High / Low	High	High: heating control Low: cooling control	
	E o d mode		ON/OFF/PID	ON/OFF	Selected which control mode ON/OFF control PID control	
	o n f on/off control				ON/OFF control energized	
	P i d pid control		HYS hysteresis	0 ~ 999°C	0°C	The hysteresis value: only for ON/OFF control mode. PID control energized
		P b	YES / NO	NO	Auto Tune	
		P p p value	0 ~ 999	30	Proportional band	
		I i value	0 ~ 999	30	Integral time (sec) No integral action by setting 0	
		d d d value	0 ~ 999	30	Derivative time (sec) No derivative action by setting 0	
		E t e manual reset	-99 ~ 999	0	Manual reset	
		c y c	0 ~ 999	5	No effect if the integral value greater than zero.	
	R 1 alarm 1 set value		-99 ~ 999°C	80°C	For setting the desired alarm temperature.	
	H y 1 hysteresis		0 ~ 999°C	0°C	The hysteresis value.	
	d y 1 delay time		0 ~ 99 sec	0 sec	Delay time for turn on/off relay alarm 1	
	R 1 H direction		High / Low	High	High: overheat alarm mode Low: undercooling alarm mode	
	E d 1		0 = 1	0		
	R 2 alarm 2 set value		-99 ~ 999°C	0°C	For setting the desired alarm temperature.	
	H y 2 hysteresis		0 ~ 999°C	0°C	The hysteresis value.	
	d y 2 delay time		0 ~ 99 sec	0 sec	Delay time for turn on/off relay alarm 2	
	R 2 L direction		High / Low	Low	High: overheat alarm mode Low: undercooling alarm mode	
	E d 2		0 = 1	0		
	b . s bias compensation		-99 ~ 999°C	0°C	Compensate the internal temperature error	
	d e f return default		YES / NO	NO	*YES: return all values to default *NO: cancel	
	H e 1		YES / NO	Yes		
	H e 2		YES / NO	Yes		
	P 3 d		0 ~ 999	0		

A:R B:b C:c D:d E:e F:f G:g H:h I:i J:j K:k L:l M:m  
N:n O:o P:p Q:q R:r S:s T:t U:u V:v W:w X:x Y:y Z:z

### PROGRAM SETTING FLOWCHART



### FRONT PANEL

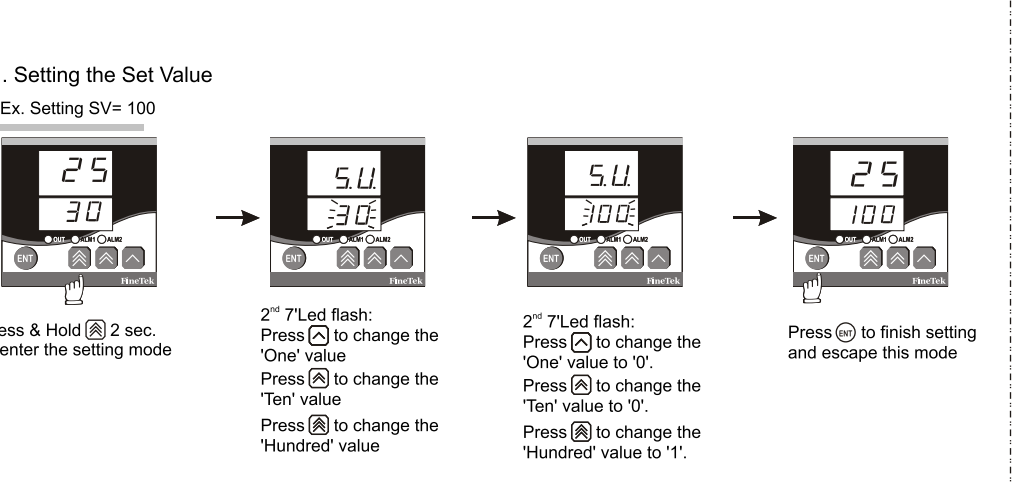


### Alarm Mode

The table is express for Alarm1 setting Alarm1 setting is the sam.

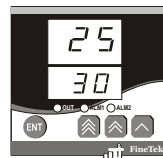
Alarm1 Type	Alarm1 Outp Operation	
	A1 ≥ 0	A1 < 0
Absolute-value upper-limit ED1=0;A1H=HI	ON OFF	ON OFF
Absolute-value lower-limit ED1=0;A1H7=LO	ON OFF	ON OFF
Upper-limit(deviation) ED1=1;A1H=HI	ON OFF	ON OFF
Lower-limit(deviation) ED1=1;A1H=LO	ON OFF	ON OFF

### SETTING MODE

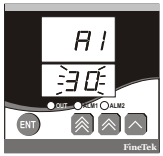


## SETTING MODE

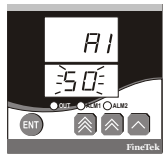
### 2.. Setting 1<sup>st</sup> Alarm Ex. Setting A1= 50



Press & Hold **ENT** 2 Sec.  
To enter the alarm1 mode



2<sup>nd</sup> 7Led flash:  
Press **▲** to change the 'One' value  
Press **▲** to change the 'Ten' value  
Press **▲** to change the 'Hundred' value

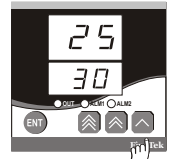


2<sup>nd</sup> 7Led flash:  
Press **▲** to change the 'One' value to '0'.  
Press **▲** to change the 'Ten' value to '5'.  
Press **▲** to change the 'Hundred' value to '0'.

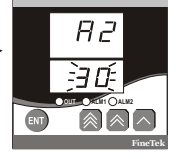


Press **ENT** to finish setting and escape this mode

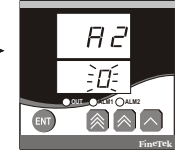
### 3. Setting 2<sup>nd</sup> Alarm (option) Ex. Setting A2= 0



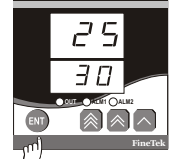
Press & Hold **ENT** 2 Sec.  
To enter the alarm2 mode



2<sup>nd</sup> 7Led flash:  
Press **▲** to change the 'One' value  
Press **▲** to change the 'Ten' value  
Press **▲** to change the 'Hundred' value



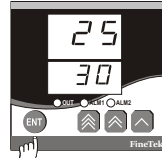
2<sup>nd</sup> 7Led flash:  
Press **▲** to change the 'One' value to '0'.  
Press **▲** to change the 'Ten' value to '0'.  
Press **▲** to change the 'Hundred' value to '0'.



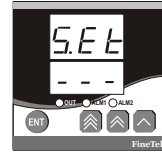
Press **ENT** to finish setting and escape this mode

### 4.. Setting BIAS

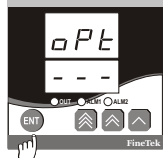
Ex. If the display of PV is less 5 C than the temp. of sensor, the user can compensate it by the following way



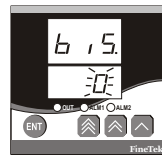
Press **ENT** 2 Sec.  
To enter the bias mode



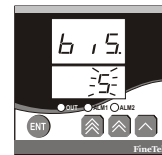
Press **▲** 4 times to enter the opt mode



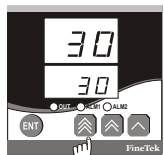
Press **ENT** to enter the subitem



Press **ENT** and the 2<sup>nd</sup> 7Led flash



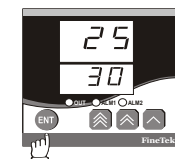
Press **▲** to change the value '5'  
Press **ENT** to finish setting



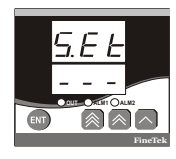
Press **▲** 2 times to finish setting and escape this mode

### 5. Aout-Tune

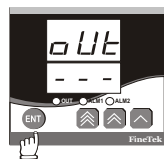
Set At to "YES"



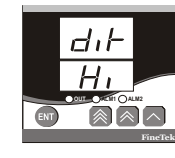
Press **ENT** 2sec  
to enter the At mode



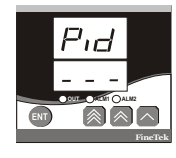
Press **▲** 1time  
to out mode



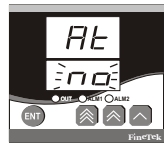
Press **ENT**  
to dir mode



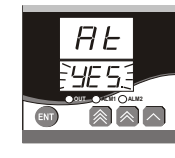
Press **▲** 3 time  
to enter PID mode



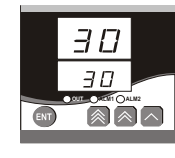
Press **ENT** 1time  
to enter At mode



Press **ENT**

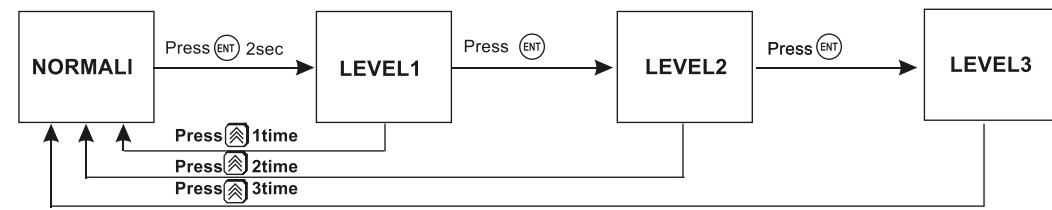


1. Press **▲** and the lower value is YES  
2. Press **ENT** finish setting



Press **▲** 3times back to normal mode

## Setting flow chart



### 1.LEVEL 1

SV Set

Output Control

Alarm 1

Alarm 2

Option

### 2.LEVEL 2

SET VALUE

Unit

Direction

Mode

On/Off or control

PID control

Alarm1 set value

Hyteresis

Delay time

Direction

Mode

Alarm 2 set value

Hyteresis

Delay time

Direction

Mode

其他設定

Bias Compensation

Return default

Hotkey set

Hotkey Direction

Set password

RANGE: -99~999°C  
DEFAULT: -30 °C

RANGE: °C /°F  
DEFAULT: °C

(HIGH)/(LOW)  
DEFAULT: (HIGH)

Value: ON/OFF or PID  
DEFAULT: ON/OFF

RANGE: -99~999°C  
DEFAULT: 80 °C

RANGE: 0~999 °C  
DEFAULT: 0 °C

RANGE: 0~999 secretary  
DEFAULT: 0 sec

RANGE: HIGH/LOW  
DEFAULT: HIGH

RANGE: (0)/(1)  
DEFAULT: (0)

RANGE: -99~999°C  
DEFAULT: 0 °C

RANGE: 0~999 °C  
DEFAULT: 0 °C

RANGE: 0~999 sec  
DEFAULT: 0 secretary

RANGE: HIGH/LOW  
DEFAULT: LOW

RANGE: (0)/(1)  
DEFAULT: (0)

PV  
RANGE: -99~999 °C

DEFAULT: NO

RANGE: Yes/No  
DEFAULT: Yes

RANGE: Yes/No  
DEFAULT: Yes

RANGE: 0~999  
DEFAULT: 0

### 3.LEVEL 3

Hyteresis

Auto Tuning

P value

I value

D value

Manual reset

Cycle

RANGE: 0~999°C  
DEFAULT: 0 °C

RANGE: Yes/No  
DEFAULT: No

RANGE: 0~999  
DEFAULT: 30

RANGE: 0~999  
DEFAULT: 30

RANGE: 0~999  
DEFAULT: 30

RANGE: -99~999  
DEFAULT: 0

RANGE: 0~999  
DEFAULT: 5